

Defendant.

OPINION AND ORDER  
[Resolving Doc. 34.]

Plaintiff GE Lighting Solutions, LLC, sued defendant Agilight, Inc., claiming that several of Agilight’s light emitting diode (LED) products infringe United States Patents Nos. [7,160,140](#) (“‘140 patent”), [7,520,771](#) (“‘771 patent”), [7,633,055](#) (“‘055 patent”), and [7,832,896](#) (“‘896 patent”).<sup>1</sup> Following claim construction, the Court entered partial summary judgment for AgiLight consistent with the parties’ stipulation.<sup>2</sup> AgiLight now moves for summary judgment on the

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remaining claims because, it says, its designs lack essential elements of the ‘055 and ‘896 patents.<sup>3</sup> GE opposes summary judgment, saying sufficient evidence supports a finding of infringement.<sup>4</sup> Because Court finds that AgiLights designs lack an “annular gasket,” a “generally hollow member” and a “substantially ellipsoidal inner profile” within the meaning of the respective patents, the Court **GRANTS** AgiLight’s motion for summary judgment.

### **I. Background**

With these patents, Plaintiff GE taught LED string-light-engine structures and methods of assembly to facilitate the use of LED lights in signs and other uses. In signs, LED string lights are spaced to allow illumination of a translucent cover without dark or bright spots.<sup>5</sup> With shallower LED can-depth—a desirable feature in some applications—LED modules must be closer to avoid dark spots. The GE patents teach ways to connect LED modules in shallower cans with consistent light patterns.

These patents describe technologies used in GE’s LED light strands. These strands are typically used in back-lit commercial signage. The ‘140 patent describes a plurality of LEDs connected by “an insulated flexible conductor,” or wire.<sup>6</sup> The ‘771 patent speaks to the application of the light strands in commercial signage.<sup>7</sup> The ‘055 patent concerns a method of sealing the light

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<sup>3/</sup>[Doc. [34](#).]

<sup>4/</sup>[Doc. [39](#).]

<sup>5/</sup>[140 patent, at col. 1, ll. 10-32](#).

<sup>6/</sup>[140 patent](#).

<sup>7/</sup>[771 patent](#).

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emitting portion (or “optoelectronic device”) onto a circuit board.<sup>8</sup> Finally, the ‘896 patent covers the use of the LEDS to “illuminat[e] a target plane at a defined uniformity.”<sup>9</sup>

In an earlier Opinion and Order, the Court construed terms disputed by the parties.<sup>10</sup> For reasons set forth in that Opinion and Order, the Court found that the term “annular gasket” is a three-dimensional, deformable material used to make a pressure-tight joint between stationary parts, with an opening in its center capable of sealing off its center area when bonded statically between stationary parts on its top and bottom. The Court construed “generally hollow member” to mean a tubular or prism-like element that is capable of attaching to a mold and is capable of acting with a gasket to isolate its contents (such as an LED) from sealants. Finally, the Court concluded that the term “insulation displacement connector” or “IDC connector” as used in these patents means the Insulation Displacement Connector assembly with three key components. First, the connector consists of a housing of two parts. Second at least one part of the housing includes four electrical terminals. Third, the two parts can snap together to enclose three insulated conductors such as wires. The snapping together of the two component parts allows the terminal to cut or pierce through the insulation of that conductor, while at the same time forestalling the conductor from moving out of or detaching from the assembly. Once this connection is made between the terminal of the IDC connector and the insulated conductor, the two may be conductive.

Following claim construction, the parties stipulated that under the Court’s construction of

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<sup>8</sup>/[‘055 patent](#).

<sup>9</sup>/[‘896 patent](#).

<sup>10</sup>[Doc. [32](#).]

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“IDC Connector,” GE could not prevail on its claims of infringement of the ‘140 and ‘771 patents.<sup>11</sup> The Court granted partial summary judgment pursuant to the stipulation.<sup>12</sup> AgiLight then filed for summary judgment on GE’s remaining claims stemming from the ‘055 and ‘896 patents.<sup>13</sup> Generally, AgiLight says that it does not infringe the ‘055 patent because its method of manufacturing includes neither an “annular gasket” nor a “generally hollow member.”<sup>14</sup> It says that it does not infringe the ‘896 patent because its lenses include an angled, non-curved surface that is essential to their light distribution.<sup>15</sup> In response, GE says that a jury could find that the element used by AgiLight to cover the optic and which bonds to the PCB is an “annular gasket.”<sup>16</sup> And it says that AgiLight’s mold could be a “generally hollow member.”<sup>17</sup> Finally, it says that the ‘896 patent does not require that the claimed LED lenses be perfect spheres or ellipses, and, so, the angles on AgiLight’s lenses do not save them from infringement.<sup>18</sup>

## II. Legal Standard

Summary judgment is appropriate “if the pleadings, the discovery and disclosure materials on file, and any affidavits show that there is no genuine issue as to any material fact and that the

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<sup>11</sup>/[Doc. [36](#).]

<sup>12</sup>/[Doc. [38](#).]

<sup>13</sup>/[Doc. [34](#)]

<sup>14</sup>/Doc. [34](#) at 11-12.]

<sup>15</sup>/[Doc. [34](#) at 13.]

<sup>16</sup>/[Doc. [39](#) at 6-7.]

<sup>17</sup>/[Doc. [39](#) at 11.]

<sup>18</sup>/[Doc. [39](#) at 13.]

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movant is entitled to judgment as a matter of law.”<sup>19</sup> The moving party has the initial burden of showing the absence of a genuine issue of material fact as to an essential element of the case.<sup>20</sup> “A fact is material if its resolution will affect the outcome of the lawsuit.”<sup>21</sup> The movant must “inform[] the district court of the basis for its motion, and identifying those portions of ‘the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any,’ which it believes demonstrate the absence of a genuine issue of material fact.”<sup>22</sup>

Once the movant satisfies its burden, the burden shifts to non-moving party to set forth specific facts showing a triable issue.<sup>23</sup> It is not sufficient for the Defendants to show that there is some existence of doubt as to the material facts.<sup>24</sup> Nor can the Defendants rely upon mere allegations or denials of its pleadings.<sup>25</sup> In responding to a summary judgment motion, Defendants “cannot rely on the hope that the trier of fact will disbelieve the movant’s denial of a disputed fact, but must present affirmative evidence in order to defeat a properly supported motion for summary judgment.”<sup>26</sup>

In deciding a motion for summary judgment, the Court views the factual evidence and draws

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<sup>19/</sup>[\*Daugherty v. Sajar Plastics, Inc.\*, 544 F.3d 696, 702 \(6th Cir. 2008\).](#)

<sup>20/</sup>[\*See Celotex Corp. v. Catrett\*, 477 U.S. 317, 323 \(1986\).](#)

<sup>21/</sup>[\*Martingale, LLC v. City of Louisville\*, 361 F.3d 297, 301 \(6th Cir. 2004\).](#)

<sup>22/</sup>[\*Celotex Corp.\*, 477 U.S. at 323](#) (quoting [Fed. R. Civ. P. 56\(c\)](#)).

<sup>23/</sup>[\*See Matsushita Elec. Indus. Co. v. Zenith Radio Corp.\*, 475 U.S. 574, 587 \(1986\).](#)

<sup>24/</sup>[\*See id.\*](#) at 586.

<sup>25/</sup>[Fed. R. Civ. P. 56\(c\)](#).

<sup>26/</sup>[\*Street v. J.C. Bradford & Co.\*, 886 F.2d 1472, 1477 \(6th Cir. 1989\)](#) (internal quotation omitted).

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all reasonable inferences in favor of the non-moving party.<sup>27</sup> “The disputed issue does not have to be resolved conclusively in favor of the non-moving party, but that party is required to present some significant probative evidence that makes it necessary to resolve the parties’ differing versions of the dispute at trial.”<sup>28</sup>

Ultimately the Court must “determine whether, after resolving reasonable factual inferences in favor of the patentee, the district court correctly concluded that no reasonable jury could find infringement.”<sup>29</sup> And “[t]o establish liability for direct infringement of a claimed method or process under 35 U.S.C. § 271(a), a patentee must prove that each and every step of the method or process was performed.”<sup>30</sup> In determining literal infringement “[t]he court . . . compares the properly construed claims to the allegedly infringing device to determine whether all of the claim limitations are present, . . . literally.”<sup>31</sup>

### III. Analysis

#### A. The ‘055 Patent

GE says that AgiLight infringes Claims 1, 2, 3, 7, 8, 9, and 13 of the ‘055 Patent. The independent claim, claim 1 of the ‘055 Patent, recites a claim for

A method comprising: disposing an optoelectronic device on a circuit board, the

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<sup>27/</sup>[\*Thomas v. Cohen\*, 453 F.3d 657, 660 \(6th Cir. 2004\)](#) (citations omitted).

<sup>28/</sup>[\*60 Ivy Street Corp. v. Alexander\*, 822 F.2d 1432, 1435 \(6th Cir. 1987\)](#) (citing [\*First Nat’l Bank of Ariz. v. Cities Serv. Co.\*, 391 U.S. 253, 288-89 \(1968\)](#)).

<sup>29/</sup>[\*Move, Inc. v. Real Estate Alliance Ltd.\*, No. 2012-1342, 2013 WL 781645, at \\*2 \(Fed. Cir. Mar. 4, 2013\)](#) (quoting [\*Absolute Software, Inc. v. Stealth Signal, Inc.\*, 659 F.3d 1121, 1130 \(Fed.Cir.2011\)](#)).

<sup>30/</sup>[\*Id.\* at \\* 3.](#)

<sup>31/</sup>[\*Innovention Toys, LLC v. MGA Entm’t, Inc.\*, 637 F.3d 1314, 1318 \(Fed. Cir. 2011\).](#)

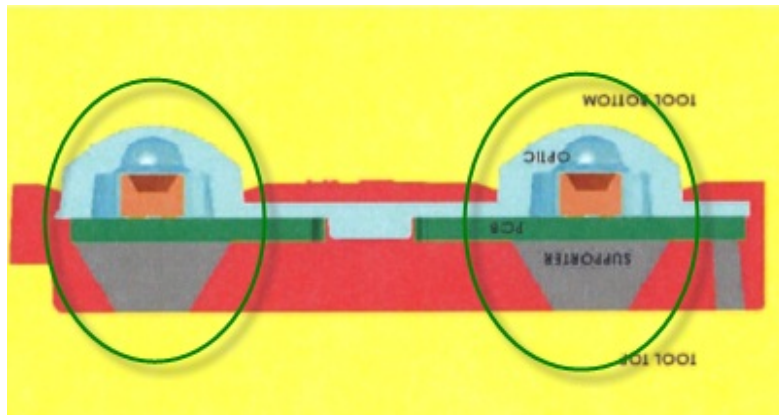
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disposing including electrically connecting the optoelectronic device with the circuit board; disposing an annular gasket on the circuit board to surround the optoelectronic device; and sealing the circuit board with a sealant that also covers at least an outer annular portion of the annular gasket, but does not cover the optoelectronic device, the sealing comprising (i) disposing the circuit board in an injection mold that includes a generally hollow member receiving the optoelectronic device and having an edge sealing against the gasket and (ii) injecting sealant material into the injection mold, the injected sealant material being blocked by the generally hollow member and the annular gasket from reaching the optoelectronic device.<sup>32</sup>

The Court finds two of the claimed limitations of the ‘055 patent, properly construed are not present in AgiLight’s methods. The AgiLight devices lack both an “annular gasket” and a “generally hollow member.”

Under the Court’s construction of “annular gasket” as used in the ‘055 patent, an annular gasket must have “an opening in its center.” GE says that

the Blue Element [in the diagram below], like the annular gasket disclosed in the ‘055 patent, is brought into direct sealing contact with a hollow opening (or socket) in the tooling mold to form a pressure-tight joint between the sidewalls of the Blue Element and the portions of the mold that define the hollow socket to seal off the center of the opening from the injected molding material.”<sup>33</sup>



**Figure 1**

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<sup>32</sup>/[’055 patent at col 10 ll 39-55.](#)

<sup>33</sup>/[Doc. [39](#) at 7.]

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This interpretation goes too far. First, even accepting GE’s argument, AgiLight’s design has multiple openings in a single blue element to house LEDs, not “an opening.” Second, under GE’s understanding, the term “opening” would be synonymous with the inside of any concave surface. The Court declines to give “opening” such a strained meaning. Simply put, a croissant is not a donut.



**Figure 2**



**Figure 3**

Moreover, the Court believes that a lens and a gasket fulfill fundamentally different functions. A gasket has the function of sealing off an enclosed area when bonded between two static parts. A lens has the function of channeling or focusing light. These fundamentally different functions preclude a finding that AgiLight’s lens is also a gasket or the equivalent of a gasket.

The Court also finds that Aglight’s products lack a generally hollow member. The Court construed the term to mean a tubular or prism-like element that is capable of attaching to a mold and is capable of acting with a gasket to isolate its contents (such as an LED) from sealants. GE says that “a reasonable jury could find that the sockets [circled below] in AgiLight’s mold are ‘tubular or prism-like elements.’”<sup>34</sup>

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<sup>34</sup>/[Doc. [39](#) at 10.]

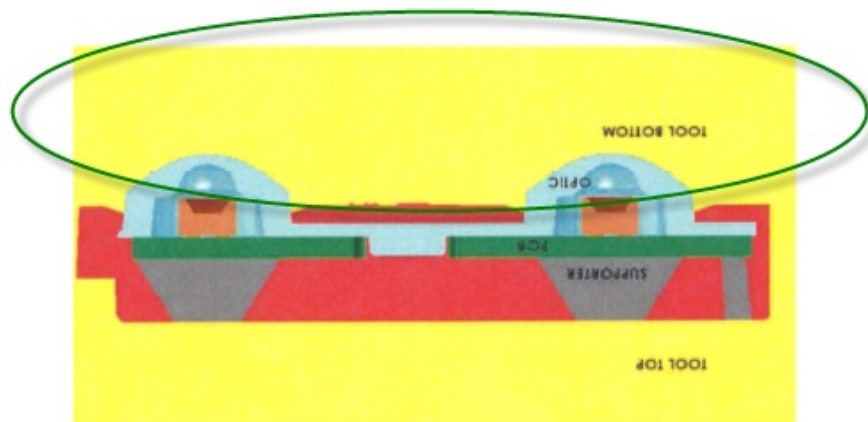


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**Figure 4**

Again the Court disagrees. There is, quite simply, nothing tubular or prism-like about the circled portion. And the Court finds even less reason to so conclude considering the entirety of the object.



**Figure 5**

Moreover, under GE's proposed definitions, the generally hollow member would not be necessary at all in AgiLight's design because the lens/gasket would, alone, be capable of isolating

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the LED from sealants. Yet the claimed method involves “injecting sealant material into the injection mold, the injected sealant material being blocked [from the LED] by the generally hollow member and the annular gasket from reaching the optoelectronic device.” Absent the use of these two elements in conjunction, a jury could not find infringement. Accordingly, the Court concludes that no reasonable jury could find that AgiLight’s manufacturing methods literally infringe the ‘055 patent.

#### **B. ‘896 Patent**

GE next says that AgiLight’s products infringe independent Claim 16 of the ‘896 Patent. Claim 16 claims the use of a “substantially ellipsoidal inner profile” to increase the spread of the LED’s light:

A light engine comprising: a plurality of electrically interconnected LED modules, the LED modules including a support having circuitry on a first surface; an LED on the first surface of the support and electrically connected to the circuitry, the LED having a primary viewing angle; a substantially dome-shaped refractive *optical element covering the LED, the optical element having a generally spherical outer profile and substantially ellipsoidal inner profile to increase the primary viewing angle of the LED* to provide an altered viewing angle that is greater than the primary viewing angle; and an overmolded housing substantially surrounding said support and contacting the optical element to seal the LED protecting the LED from ambient.<sup>35</sup>

The parties define “generally spherical outer profile” as “an outer three-dimensional surface where the points on the surface are generally equidistant from a center point.”<sup>36</sup> They also apparently stipulate that “substantially ellipsoidal inner profile” means “an inner three-dimensional surface where the sum of the distances from two focal points and the points on the inner surface is

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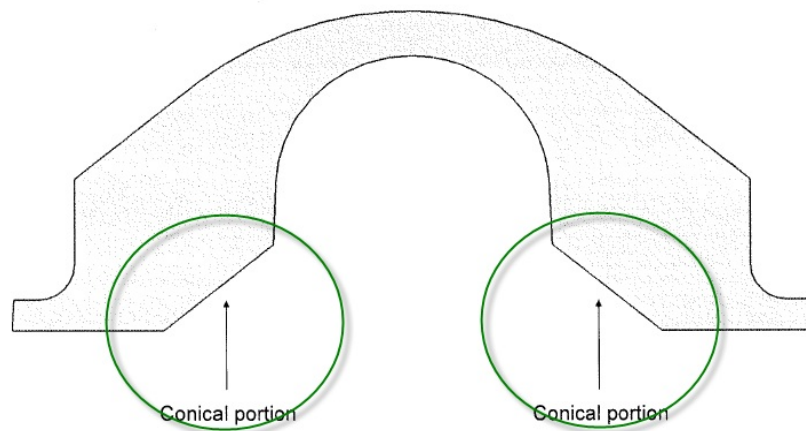
<sup>35</sup>/[‘896 patent at col. 8, ll. 23-38 \(emphasis added\)](#).

<sup>36</sup>/This stipulation was discussed at the *Markman* hearing, and appears in AgiLight’s briefing, Doc. [34](#) at 12, yet, curiously, neither party actually files the stipulation on the docket.

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substantially constant.”

The Court finds the “substantially ellipsoidal inner profile” lacking from AgiLight’s designs. In particular, to the sides of what is arguably an ellipsoidal portion of AgiLight’s lens appears a portion that is conical, and not ellipsoidal. The Sasian Declaration, which is unrebutted, explains that “[i]t is through the use of all three portions [spherical, cylindrical, and conical] of the inner surface of the lens that the lens used in the AgiLight products widens the pattern of light rays emitted by the LED over which the lens is placed.”<sup>37</sup> Given the importance of the conical portions of AgiLight’s lens the Court finds that the entirety of the lens cannot be considered substantially ellipsoidal.



**Figure 6**

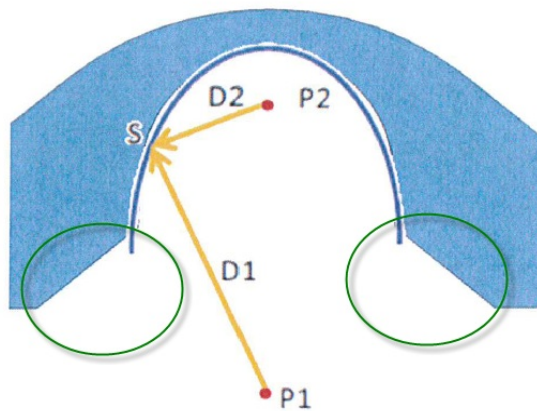
The parties’ definition creates some difficulty as it does not define “substantially.” “Substantially might refer to shape and size, (i.e. is the lens mostly shaped as an ellipse), or to essence, (i.e., is the most important part of the lens an ellipse). Under either definition, the Court agrees with AgiLight, but the Court believes that the latter is the better reading. While GE’s

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<sup>37</sup>/[Doc. [35-10](#) at 4.]

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attorneys' retouching of the image casts some doubt on whether what GE calls the cylindrical and spherical portions of the lens are "substantially ellipsoidal" they do not seriously contest the conical positions:



**Figure 7**

Given that the invention of the '896 patent is the channeling of light so as to illuminate a plane at a relative uniformity, the method by which a device achieves that effect is central to the invention. According to Dr. Saisin, in AgiLight's design, a conical surface is central to that effect. Absent some rebuttal, there is no dispute of material.

The prosecution history reenforces this finding. The inventors initially sought to patent "a substantially dome-shaped refractive optical element covering the LED, the optical element being configured to increase the primary viewing angle of the LED to provide an altered viewing angle that is greater than the primary viewing angle."<sup>38</sup> When the patent office rejected this claim, the inventors honed their claim on the "substantially ellipsoidal inner profile," at which point the patent office accepted the claim. This revision suggests that the ellipsoidal language was key to overcoming the

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<sup>38</sup>/[Doc. [35-6](#) at 14.]

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rejection. Such an amendment estops GE from now arguing that the patent ought to include other means of widening the viewing angle of the LED beam.<sup>39</sup>

Even construing “substantially” to refer to the general shape of the lens’ inner profile, however, the Court still agrees with AgiLight. Under the stipulated definition, “the sum of the distances [D1 and D2 in Figure 7] from two focal points [P1 and P2 in Figure 7] and the points on the inner surface [S in Figure 7] is substantially constant.” In the circled, conical portions of the inner surface, these values would vary significantly. This is enough to render the interior not “substantially ellipsoidal.” Without this element, or its equivalent, GE cannot make this claim in AgiLight’s design.

#### IV. Conclusion

For the foregoing reasons, the Court concludes that a jury could not reasonably find that AgLight’s devices infringe GE’s patents. Accordingly, the Court **GRANTS** AgLight’s motion for summary judgment.

IT IS SO ORDERED.

Dated: March 18, 2013

s/ James S. Gwin  
JAMES S. GWIN  
UNITED STATES DISTRICT JUDGE

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<sup>39</sup>/See [\*Wang Laboratories, Inc. v. Mitsubishi ElectronicSs Am., Inc.\*, 103 F.3d 1571, 1578 \(Fed. Cir. 1997\)](#) (“Once prosecution history estoppel limits the scope of a patent, the patentee may not recover for infringement where infringement would require an equivalence between a claim element and an aspect of the accused item that falls within the estoppel.”)